

fore an artificial limb can be worn comfortably. (3) The reduction of fat and the atrophy of muscle. Pylons reduce stumps more quickly than any other means. (4) The prevention of prolonged use of crutches. Many men seek the line of least resistance and, having acquired the crutch habit, will use their crutches all week, and their artificial limb on Sunday, because they have not acquired the same skill in the use of the limb as they were forced by circumstances to acquire with crutches.

Practically all flexion deformities are developed from the use of crutches. The stump is always held forward in the same position, and in a few weeks the iliopsoas and pectineus muscles contract and shorten, and if untreated a fibrous ankylosis supervenes. Only continued forcible stretching will correct this condition. A limb cannot be worn until it is overcome.

It is hoped that this paper may be the means of assisting some of these patients to obtain less uncomfortable, as well as more serviceable, artificial limbs.

California, Too—In speaking of "Suits Against County Physicians," in the January, 1923, issue of the Long Island Medical Journal, the editor says:

"One of the trying things about the practice of medicine in rural Long Island is the liability of law-suits. At least five such suits were brought against Suffolk County doctors in 1922. Broken bones are especially the excuse for starting suits. The patients themselves are usually satisfied, but they are persuaded by alleged friends that they have been badly treated. To illustrate. A young man with a broken wrist was treated carefully and conscientiously by a physician who possessed both skill and a conscience. After the recovery the wrist was somewhat stiff and tender, as are all broken wrists. A public spirited minister of the Gospel, who had been prominent in the boy scout movement, interested himself in the patient and took him to one of the largest and most scientific hospitals in New York City. There the alleged surgeon told the patient that the result was deplorable, and that the country doctor did not know how to treat broken wrists. On this advice suit was brought, but the plaintiff failed to appear at the trial.

"Every thoughtful physician wishes that he never would see a broken bone; but since he treats fractures for the sake of humanity, his only safe course is to call in at least two consultants and give the case double the attention that it really requires. Consultation in these cases regardless of a fee is a duty which every doctor owes to others, for it is in the nature of an insurance against malpractice suits.

"As for the young, thoughtless internes and associates attending physicians at big hospitals, who seek to magnify their own importance by decrying the skill of rural physicians; they need to feel the discipline of the governing boards and of the county societies. The difficulty, of course, is that they commit nothing to writing, and, therefore, can deny saying anything unethical. Two Utopian rules which should be required of every hospital are: (1) No opinion derogatory to the previous physicians shall be expressed to the patient. (2) A written opinion or diagnosis shall be sent to the previous physician.

"These rules are observed when a physician sends his cases to the hospital. They are equally applicable to all other cases."

THE GENESIS AND TREATMENT OF INSOMNIA *

By HENRY DOUGLAS EATON, M. D., Los Angeles

Insomnia is a popular and much-abused term, used to describe any degree of sleeplessness however mild. The man who has dined too well or the man who is planning a new house frequently describes one or two restless nights as "suffering from insomnia." Such temporary and passing disturbances should not be dignified by the name insomnia, and will not be considered further than to class them as the ordinary average breaks in the sleep habit which fall to the lot of us all. We will confine our present discussion to persistent, long-continued sleeplessness. Such a bad habit when thoroughly engrafted on an individual often lasts months or years, and interferes markedly with its possessor's health and happiness.

Insomnia is, of course, a symptom, not a disease, and is of very little diagnostic importance. Indicative of physical or mental unrest, it acts as confirmatory evidence of physical or mental irritation, but its presence is no definite proof of the existence of any one disease. From our patients' standpoint, and therefore from the therapeutic standpoint, it is of considerable importance.

The text-book etiology of insomnia is as varied as is usually the case in symptoms or diseases where the specific cause is not known. It is found in association with organic and functional disorders, more frequently in the latter type of case.

In this paper I shall discuss the problem on the hypothesis that true insomnia is a nervous disorder, dependent for its existence on psychic disturbance, on a disturbance in consciousness. Such a disturbance in consciousness may be induced by physical or mental causes or, as is usually the case, by a mixture of both. Insomnia, in other words, is not just sleeplessness, but sleeplessness to which anxiety and fear, in regard to its effects as well as frenzied efforts to eradicate it, are added. Furthermore this condition is found associated, in the vast majority of patients, with an underlying condition of mental unrest or nervous disturbance. The seat of insomnia is above the collar, not below. It is a physiological problem, primarily with secondary physical elements, and can only be successfully treated from the re-educational standpoint.

Insomnia is partially, at least, a nervous or mental problem. It must of necessity be so if we remember our physiology, which tells us that the nervous system is involved in any reaction of the organism. The question to be determined from the standpoint of therapeutics is the relative importance of the mental and physical factors in the genesis of this symptom.

Our knowledge of the physiology of the production of sleep is still in the theoretical stage; the exact mechanism remains unsolved, though three theories, the toxic, the cerebral anemia, and the neuron retraction theory, each have their adherents. The scope of this paper does not permit, even were it profitable, a discussion of these the-

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ories; so I will dismiss the first two with this brief mention, accepting the neuron retraction theory as the most promising in my own experience.

This theory is based on the conception that there occurs an actual retraction of the neurons during sleep, thus mechanically breaking the circuit at the synapses and so cutting the brain off from sensory stimuli. This theory remains unproved, though numerous attempts have been made to prove it histologically. It does, however, explain satisfactorily the known characteristics of the rest-sleep state if accepted in the psychological sense. While there is probably not an actual retraction of the dendrites at the synapses, or at least definite proof of such is lacking, there is a raising of the threshold of consciousness to most of the incoming sensory paths; there is a withdrawal of conscious contact with the environment comparable in effect to actual dendritic retraction.

We will presume, then, that the rest-sleep state is caused by a break or at least an increased resistance in the connection from outside world to brain or consciousness, thus producing diminished contact with the immediate environment. Whether toxic substance in the blood or mechanical changes in the blood supply of the brain are additional physical factors remains problematical.

Let us turn now from the theoretical to the practical for whatever our conception of the actual physical mechanism of sleep may be, the intelligent therapy of disturbances of sleep must be based on an understanding of the normal sleep habit. Sleep, however, as shown by comparative physiology and common experiences, is but a part of the larger problem of rest, and so we must first turn to a study of the latter.

The physiologists tell us that in living tissue, whether it be gland or muscle or nerve, periods of activity always alternate with periods of diminished activity, allowing for rest and repair. Such alternation is absolutely essential to the well-being of the organism. In the human machine such periods of relative inactivity for its various tissues are obtained, in a large measure, by regular periods of rest and sleep for the entire organism. This rest may be divided arbitrarily for descriptive purposes into physical rest and mental rest.

Bodily or physical rest consists not in a stopping of all physical activity, for all physical processes continue to a lessened degree, but fundamentally in a cessation of all voluntary muscular effort. When bed is sought and the prone position is taken, effort becomes unnecessary and complete physical relaxation normally takes place. The prone position relieves, to a considerable degree, the demands on circulation and respiration, and these with practically all the vegetative functions are reduced in activity. Physical rest, therefore, consists in a cessation of voluntary demands plus the placing of one's machine in the position of greatest mechanical ease.

Mental rest, likewise, is a cessation of voluntary effort; a reduction or absence mainly of voluntary control not of the body, but of the mental processes. The basis of such a relinquishment of executive control is a temporary but complete non-

responsibility for the mental content, as well as for what the content may be doing. This non-responsible attitude is the prime essential of mental rest. It co-ordinates and reciprocates perfectly with limitation in control of the voluntary muscles, as well as with the slowing down of all the vegetative processes.

One more element of mental rest, the moral or spiritual aspect, is also of prime importance and it may be summed up in the one word—"acceptance." No one of us can go to bed with our problems all finished, nor completely safeguard ourselves against anxiety for the future, but we can and must learn to declare a truce and accept as the starting place for tomorrow's endeavors the role we find ourselves at present playing as the result of the irrevocable past.

Voluntary effort, mental and physical, means to us all the mobilization of our energies to accomplish some end. Rest is a cessation in this mobilization of our forces, in this preparation for effort. Restlessness, on the other hand, is a state characterized by overmobilization of energy—by having in consciousness, constantly on the verge of expression, more energy than the job at hand can possibly utilize; more really than can be automatically demobilized within the time limits of an ordinary night's rest. The effect of such restlessness is that such periods as should be given to rest are largely occupied by unsuccessful attempts to demobilize this unexpressed and inexpressible accumulation of energy. Such unsuccessful efforts cause the uncomfortable nocturnal state of tossing, turning, endeavors to let go or to let down so familiar to the sufferer from insomnia.

The resting state is typically a relaxation of moral, mental, and physical efforts. It is a relinquishment of trying to control either one's mind, one's body or one's destiny; a demobilization of all voluntary energy. The attention wanders unguided, thoughts flow under it without let or hindrance, guided solely by the laws of association. The mental panorama becomes more and more kaleidoscopic; finally, to go off into dreams. The immediate surroundings become progressively less interesting, the threshold of consciousness is raised to incoming sensory stimuli; the wandering indifferent mind becomes more and more isolated in its own circumscribed world. At this point we lose consciousness, a gap occurs, to be recognized only when we later awaken and realize that such a gap has occurred. This description of the transition from wakefulness to sleep illustrates definitely and completely the relationship of sleep to rest. Sleep is an additional element, recurrent and periodic, grafting itself on rest when certain conditions are propitious. It is not rest but a part of rest, an effect of rest not a cause. It is to be particularly noted that sleep, because it is a by-product of rest, cannot be produced directly, while rest, on the other hand, can be acquired both voluntarily and directly, with a consequent solution of the rest-sleep problem. One can be restless without being sleepless, one can be sleepless without having insomnia. Being restless and, therefore, sleepless, and then in addition worrying about

the condition and making frantic efforts to sleep, inevitably results in insomnia.

We are now in a position to understand why insomnia is found associated with so many different and unrelated disease conditions. Analysis of the disease or drugs commonly listed as causing insomnia shows them to have one characteristic in common; namely, stimulation or irritation, with or without actual inflammation, of nerve structures. The brain may be affected chemically or mechanically through the blood stream or spinal fluid or through the sensory nerves. In either case undue stimulation of the brain results with a consequent undue disturbance in consciousness and, therefore, mental rest and relaxation is prevented. This explains, I think, why tea, coffee, strychnine, alcohol and tobacco, lead, mercury, tuberculosis, syphilis, pneumonia, septacemias, pyemias, typhoid, influenza, epidemic encephalitis, some endocrine disorders, circulatory disturbance with or without hypertension and indefinite gastro-intestinal disorders are commonly listed as causing insomnia. The very number and variety of these conditions suggests that they bear a casual rather than a causal relationship to the insomnia.

My experience has convinced me that the etiology of insomnia is exactly the same as the etiology of functional nervous conditions in general. Physical factors play a minor role, the real disorders occur in consciousness; it is psychic primarily, physical secondarily.

Insomnia is found most commonly in functional nervous conditions in neurasthenia, psychasthenia, and hysteria, the conditions grouped under the general term of psychoneuroses. Here it is obviously a psychogenetic, mind-made affair, though physical factors may play some small part in its genesis. It is a disease of consciousness, a condition of mental unrest kept going by fear and apprehension in regard to the effects of sleeplessness and the efforts to sleep thus engendered. If physical factors are present they must be recognized and treated, but you will not cure this distressing symptom until you cure the functional nervous disorder which underlies it.

Treatment of the temporary sleeplessness caused by general toxic or circulatory disturbances must obviously be directed at the cause of the condition and the insomnia handled symptomatically by hypnotics or other means.

The results of the immense amount of study devoted to functional nervous conditions during the war confirmed my own opinion, reached some years previously, that re-education, careful physical and mental retraining, based on the principle of giving to the patient an adequate understanding of the mechanics of the condition from which he is suffering, is the only satisfactory method of treatment through which we can hope to cure these cases. Roughly, such an individual's machine must be readjusted for him, at the same time reinstating him as its master. To accomplish such a result one can afford to neglect neither the physical nor the mental aspects of the patient's difficulty, even though the mental disturbance is more fundamental.

The successful elimination of the symptom insomnia depends, likewise, solely on specific re-education of the patient in regard to it. Such an individual must be given a definite explanation of the genesis of this symptom, and the rest-sleep relationship must be rationalized for him. Once this knowledge is accepted it will do much toward automatically solving the whole difficulty, for it must necessarily remove the fear of not sleeping, in the absence of which true insomnia does not exist. Then teach the patient to rest, for resting is a voluntary, easily acquired habit well within the abilities of any sane, reasonably intelligent individual who is given proper help and instruction in the use of his mental tools. When this bit of mental technique has been mastered—and it can be mastered in a much shorter time than it took to acquire the bad habit of insomnia—the whole problem will be permanently solved, for the patient will not only eliminate the insomnia present, but will be prepared to nip in the bud any future recurrence of the symptom.

Hypnotics should never be used in this type of insomnia, save temporarily and then only when their purpose as an artificial and temporary aid in the breaking up of an established bad habit is clearly understood by the patient. I find that I am using them less and less as my experience increases. The use of placebos given with the definite intention of deceiving the patient is never justified, in my opinion. At best, their use is a clumsy, unintelligent method of going all the way round the barn to get in the front door.

Most, important of all, do not give the patient the fear of possible bad effects from not sleeping, or keep such a fear going in a similar manner. It is essential to your treatment that you impress upon the patient by your words and actions the true conception that sleep is the non-essential—rest the essential ingredient of a normal day. This is an absolutely safe stand for you to take in handling nervous insomnia, for, strange as it may seem, I have yet to see any patient actually harmed by this type of insomnia and I have been treating such patients for the last ten years.

As a matter of fact, once the patient has learned to rest he will inevitably sleep because, as we have noted, sleep is an automatic habit which will always engraft itself on rest when conditions are propitious. The technique of resting I have described will provide the propitious conditions of physical, mental, and moral relaxation, and the sleep habit, nature's usual resting state when disturbing physical, mental, or moral irritation is not present, will be permanently regained.

The results of such treatment in a series of fifteen hundred cases showed 82.4 per cent remaining much improved or cured after two years.

The limit of this paper has allowed me to cover but sketchily the problem of insomnia. If it has served to impress the mental aspect of this symptom on your attention and, still better, if it has served to interest you in studying it, I will feel that it has amply fulfilled its purpose.